

What is claimed is:

- 1. A selective herbicidal composition comprising, in addition to customary inert formulation assistants, as the active ingredient a mixture of
- a) a herbicidally effective amount of a compound of formula I

wherein

 R_1 and R_3 independently of one another are halogen, nitro, cyano, C_1 - C_4 -alkyl, C_2 - C_4 -alkenyl, C_2 - C_4 -alkinyl, C_1 - C_4 -halogenalkyl, C_2 - C_6 -halogenalkenyl, C_3 - C_6 -cycloalkyl, halogensubstituted C_3 - C_6 -cycloalkyl, C_2 - C_6 -alkoxyalkyl, C_2 - C_6 -alkylthioalkyl, hydroxy, mercapto, C_1 - C_6 -alkoxy, C_3 - C_6 -alkenyloxy, C_3 - C_6 -alkinyloxy, carbonyl, carboxyl, C_1 - C_4 -alkylcarbonyl, C_1 - C_4 -hydroxyalkyl, C_1 - C_4 -alkoxycarbonyl, C_1 - C_4 -alkylthio, C_1 - C_4 -alkylsulfinyl, C_1 - C_4 -alkylsulfonyl, amino, C_1 - C_4 -alkylamino or di- $(C_1$ - C_4 -alkyl)-amino;

R₄ and R₅ together signify a group

$$-C-R_6(R_7)-O-C-R_8(R_9)-C-R_{10}(R_{11})-C-R_{12}(R_{13})-(Z_1),$$

$$-C-R_{14}(R_{15})-C-R_{16}(R_{17})-O-C-R_{18}(R_{19})-C-R_{20}(R_{21})-$$
 (Z₂), or

$$-C-R_{22}(R_{23})-C-R_{24}(R_{25})-C-R_{26}(R_{27})-O-C-R_{28}(R_{29})-;$$
 (Z₃);

wherein R_6 , R_7 , R_8 , R_9 , R_{10} , R_{11} , R_{12} , R_{13} , R_{14} , R_{15} , R_{16} , R_{17} , R_{18} , R_{19} , R_{20} , R_{21} , R_{22} , R_{23} , R_{24} , R_{25} , R_{26} , R_{27} , R_{28} , and R_{29} independently of one another are hydrogen, halogen, C_1 - C_4 -alkyl or C_1 - C_4 -halogenalkyl, whereby an alkylene ring, which together with the carbon atoms of groups Z_1 , Z_2 or Z_3 contains 2 to 6 carbon atoms and may be interrupted by oxygen, may be either anellated or spiro-linked to the carbon atoms of groups Z_1 , Z_2 or Z_3 , or this alkylene ring overbridges at least one ring atom of groups Gruppen Z_1 , Z_2 or Z_3 ; C_1 is hydrogen, C_1 - C_1 - C_2 - C_3 - C_1 - C_3 - C_1 - C_3 -

 X_1 , X_2 , X_3 , X_4 , X_5 and X_5 independently of one another, are oxygen or sulfur; R_{30} , R_{31} , R_{32} und R_{33} independently of one another, are hydrogen,

C₁-C₁₀-alkyl, C₁-C₁₀-halogenalkyl, C₁- C₁₀-cyanoalkyl, C₁- C₁₀-nitroalkyl, C₁- C₁₀-aminoalkyl,



C₁-C₅-alkylamino-C₁-C₅-alkyl, C₂-C₈-dialkylamino- C₁-C₅-alkyl, C₃-C₇.cyclalkyl-C₁-C₅-alkyl, C₂-C₁₀-alkoxy-alkyl, C₄- C₁₀-alkenyloxy-alkyl, C₄- C₁₀-alkinyloxy-alkyl, C₂- C₁₀-alkylthio-alkyl, C₁- C_5 -alkysulfoxyl- C_1 - C_5 -alkyl, C_1 - C_5 -alkylsulfonyl- C_1 - C_5 -alkyl, C_2 - C_8 -alkylideneamino-oxy- C_1 -C₅-alkyl, C₁-C₅-alkylcarbonyl-C₁-C₅-alkyl, C₁-C₅-alkoxycarbonyl-C₁-C₅-alkyl, C₁-C₅-aminocarbonyl-C₁-C₅-alkyl, C₂-C₈-dialkylamino-carbonyl-C₁-C₅-alkyl, C₁-C₅-alkylcarbonylamino-C₁-C₅-alkyl, C₂-C₅-alkylcarbonyl-(C₁-C₅-alkyl)-aminoalkyl, C₃-C₆-trialkylsilyl-C₁-C₅-alkyl, phenyl-C₁-C₅-alkyl, heteroaryl- C₁-C₅-alkyl, phenoxy- C₁-C₅-alkyl, heteroaryloxy- C₁-C₅-alkyl, C₂-C₅alkenyl, C₂-C₅-halogenalkenyl, C₃-C₈-cycloalkyl, phenyl; or phenyl substituted by C₁-C₃-alkyl, C₁-C₃-halogenalkyl, C₁-C₃-alkoxy, C₁-C₃-halogenalkoxy, halogen, cyano or nitro; or heteroaryl or heteroarylamino; heteroarylamino substituted by C₁-C₃-alkyl, C₁-C₃halogenalkyl, C_1 - C_3 -alkoxy, C_1 - C_3 -halogenalkoxy, halogen, cyano or nitro; diheteroarylamino, diheteroarylamino substituted by C₁-C₃-alkyl, C₁-C₃-halogenalkyl, C₁-C₃-alkoxy, C₁-C₃halogenalkoxy, halogen, cyano or nitro; phenylamino, phenylamino substituted by C₁-C₃alkyl, C₁-C₃-halogenalkyl, C₁-C₃-alkoxy, C₁-C₃-halogenalkoxy, halogen, cyano or nitro; diphenylamino, diphenylamino substituted by C₁-C₃-alkyl, C₁-C₃-halogenalkyl, C₁-C₃-alkoxy, C₁-C₃-halogenalkoxy, halogen, cyano or nitro; C₃-C₇-cycloalkylamino, C₃-C₇-cycloalkylamino substituted by C_1 - C_3 -alkyl, C_1 - C_3 -halogenalkyl, C_1 - C_3 -alkoxy, C_1 - C_3 -halogenalkoxy, halogen, cyano or nitro; di-C₃-C₇-cycloalkylamino, di-C₃-C₇-cycloalkylamino substituted by C₁-C₃-alkyl, C₁-C₃-halogenalkyl, C₁-C₃-alkoxy, C₁-C₃-halogenalkoxy, halogen, cyano or nitro; C₃-C₇cycloalkoxy or C₃-C₇-cycloalkoxy substituted by C₁-C₃-alkyl, C₁-C₃-halogenalkyl, C₁-C₃alkoxy, C₁-C₃-halogenalkoxy, halogen, cyano or nitro; R₃₄, R₃₅ and R₃₆ independently of one another, are hydrogen, C₁-C₁₀-alkyl, C₁-C₁₀halogenalkyl, C₁- C₁₀-cyanoalkyl, C₁- C₁₀-nitroalkyl, C₁- C₁₀-aminoalkyl, C₁-C₅-alkylamino-C₁-C₅-alkyl, C₂-C₈-dialkylamino- C₁-C₅-alkyl, C₃-C₇-cyclalkyl-C₁-C₅-alkyl, C₂- C₁₀-alkoxy-alkyl, C₄-C₁₀-alkenyloxy-alkyl, C₄- C₁₀-alkinyloxy-alkyl, C₂- C₁₀-alkylthio-alkyl, C₁-C₅-alkysulfoxyl- C₁- C_5 -alkyl, C_1 - C_5 -alkylsulfonyl- C_1 - C_5 -alkyl, C_2 - C_8 -alkylideneamino-oxy- C_1 - C_5 -alkyl, C_1 - C_5 alkylcarbonyl-C₁-C₅-alkyl, C₁-C₅-alkoxycarbonyl-C₁-C₅-alkyl, C₁-C₅-amino-carbonyl-C₁-C₅alkyl, C₂-C₈-dialkylamino-carbonyl-C₁-C₅-alkyl, C₁-C₅-alkylcarbonylamino-C₁-C₅-alkyl, C₂-C₅alkylcarbonyl-(C₁-C₅-alkyl)-aminoalkyl, C₃-C₆-trialkylsilyl-C₁-C₅-alkyl, phenyl- C₁-C₅-alkyl, heteroaryl- C₁-C₅-alkyl, phenoxy- C₁-C₅-alkyl, heteroaryloxy- C₁-C₅-alkyl, C₂-C₅-alkenyl, C₂-C₅-halogenalkenyl, C₃-C₈-cycloalkyl, phenyl; or phenyl substituted by C₁-C₃-alkyl, C₁-C₃halogenalkyl, C_1 - C_3 -alkoxy, C_1 - C_3 -halogenalkoxy, halogen, cyano or nitro; or heteroaryl or heteroarylamino; heteroarylamino substituted by C₁-C₃-alkyl, C₁-C₃-halogenalkyl, C₁-C₃-



alkoxy, C₁-C₃-halogenalkoxy, halogen, cyano or nitro; diheteroarylamino, diheteroarylamino substituted by C_1 - C_3 -alkyl, C_1 - C_3 -halogenalkyl, C_1 - C_3 -alkoxy, C_1 - C_3 -halogenalkoxy, halogen, cyano or nitro; phenylamino, phenylamino substituted by C₁-C₃-alkyl, C₁-C₃-halogenalkyl, C₁-C₃-alkoxy, C₁-C₃-halogenalkoxy, halogen, cyano or nitro; diphenylamino, diphenylamino substituted by C₁-C₃-alkyl, C₁-C₃-halogenalkyl, C₁-C₃-alkoxy, C₁-C₃-halogenalkoxy, halogen, cyano or nitro; C₃-C₇-cycloalkylamino, C₃-C₇-cycloalkylamino substituted by C₁-C₃-alkyl, C₁-C₃-halogenalkyl, C₁-C₃-alkoxy, C₁-C₃-halogenalkoxy, halogen, cyano or nitro; di-C₃-C₇cycloalkylamino, di-C₃-C₇-cycloalkylamino substituted by C₁-C₃-alkyl, C₁-C₃-halogenalkyl, C₁-C₃-alkoxy, C₁-C₃-halogenalkoxy, halogen, cyano or nitro; C₃-C₇-cycloalkoxy or C₃-C₇cycloalkoxy substituted by C₁-C₃-alkyl, C₁-C₃-halogenalkyl, C₁-C₃-alkoxy, C₁-C₃halogenalkoxy, halogen, cyano or nitro; C₁-C₁₀-alkoxy, C₁-C₁₀-halogenalkoxy, C₁-C₅alkylamino, C₂-C₈-dialkylamino as well as benzyloxy or phenoxy, whereby the benzyl and phenyl groups in turn may be substituted by C₁-C₃-alkyl, C₁-C₃-halogenalkyl, C₁-C₃-alkoxy, C₁-C₃-halogenalkoxy, halogen, cyano, formyl, acetyl, propionyl, carboxyl, C₁-C₅alkoxycarbonyl, methylthio, ethylthio, or nitro; and R₃₇ is C₁-C₁₀-alkyl, C₁-C₁₀-halogenalkyl, C₁- C₁₀-cyanoalkyl, C₁- C₁₀-nitroalkyl, C₁- C₁₀aminoalkyl, C₁-C₅-alkylamino-C₁-C₅-alkyl, C₂-C₈-dialkylamino- C₁-C₅-alkyl, C₃-C₇-cyclalkyl-C₁-C₅-alkyl, C₂- C₁₀-alkoxy-alkyl, C₄- C₁₀-alkenyloxy-alkyl, C₄- C₁₀-alkinyloxy-alkyl, C₂- C₁₀alkylthio-alkyl, C_1 - C_5 -alkysulfoxyl- C_1 - C_5 -alkyl, C_1 - C_5 -alkylsulfonyl- C_1 - C_5 -alkyl, C_2 - C_8 alkylideneamino-oxy-C₁-C₅-alkyl, C₁-C₅-alkylcarbonyl-C₁-C₅-alkyl, C₁-C₅-alkoxycarbonyl-C₁-C₅-alkyl, C₁-C₅-amino-carbonyl-C₁-C₅-alkyl, C₂-C₈-dialkylamino-carbonyl-C₁-C₅-alkyl, C₁-C₅alkylcarbonylamino-C₁-C₅-alkyl, C₂-C₅-alkylcarbonyl-(C₁-C₅-alkyl)-aminoalkyl, C₃-C₆trialkylsilyl- C_1 - C_5 -alkyl, phenyl- C_1 - C_5 -alkyl, heteroaryl- C_1 - C_5 -alkyl, phenoxy- C_1 - C_5 -alkyl, heteroaryloxy- C₁-C₅-alkyl, C₂-C₅-alkenyl, C₂-C₅-halogenalkenyl, C₃-C₈-cycloalkyl, phenyl; or phenyl substituted by C₁-C₃-alkyl, C₁-C₃-halogenalkyl, C₁-C₃-alkoxy, C₁-C₃-halogenalkoxy, halogen, cyano or nitro; or heteroaryl or heteroarylamino; heteroarylamino substituted by C₁- C_3 -alkyl, C_1 - C_3 -halogenalkyl, C_1 - C_3 -alkoxy, C_1 - C_3 -halogenalkoxy, halogen, cyano or nitro; diheteroarylamino, diheteroarylamino substituted by C₁-C₃-alkyl, C₁-C₃-halogenalkyl, C₁-C₃alkoxy, C₁-C₃-halogenalkoxy, halogen, cyano or nitro; phenylamino, phenylamino substituted by C₁-C₃-alkyl, C₁-C₃-halogenalkyl, C₁-C₃-alkoxy, C₁-C₃-halogenalkoxy, halogen, cyano or nitro; diphenylamino, diphenylamino substituted by C₁-C₃-alkyl, C₁-C₃-halogenalkyl, C₁-C₃alkoxy, C₁-C₃-halogenalkoxy, halogen, cyano or nitro; C₃-C₇-cycloalkylamino, C₃-C₇cycloalkylamino substituted by C₁-C₃-alkyl, C₁-C₃-halogenalkyl, C₁-C₃-alkoxy, C₁-C₃halogenalkoxy, halogen, cyano or nitro; di-C₃-C₇-cycloalkylamino, di-C₃-C₇-cycloalkylamino



substituted by C_1 - C_3 -alkyl, C_1 - C_3 -halogenalkyl, C_1 - C_3 -alkoxy, C_1 - C_3 -halogenalkoxy, halogen, cyano or nitro; C_3 - C_7 -cycloalkoxy or C_3 - C_7 -cycloalkoxy substituted by C_1 - C_3 -alkyl, C_1 - C_3 -halogenalkyl, C_1 - C_3 -alkoxy, C_1 - C_3 -halogenalkoxy, halogen, cyano or nitro; or C_1 - C_{10} -alkyl-carbonyl; as well as salts and diastereoisomers of the compounds of formula I, with the proviso that R_1 and R_3 are not simultaneously methyl; and;

- b) a herbicidally synergistic amount of at least one herbicide selected from the classes of phenoxy-phenoxypropionic acids, hydroxylamines, sulfonylureas, imidazolinones, pyrimidines, triazines, ureas, PPO, chloroacetanilides, phenoxyacetic acids, triazinones, dinitroanilines, azinones, carbamates, oxyacetamides, thiolcarbamates, azole-ureas, benzoic acids, anilides, nitriles, triones and sulfonamides, as well as from the herbicides amitrol, benfuresate, bentazone, cinmethylin, clomazone, chlopyralid, difenzoquat, dithiopyr, ethofumesate, flurochloridone, indanofane, isoxaben, oxaziclomefone, pyridate, pyridafol, quinchlorac, quinmerac, tridiphane and flamprop.
- 2. Composition according to claim 1, which contains, to antagonise the herbicide, an antidotally effective amount of a safener selected from cloquintocet, an alkali, alkaline earth, sulfonium or ammonium cation of cloquintocet, cloquintocet-mexyl, mefenpyr, an alkali, alkaline earth, sulfonium or ammonium cation of mefenpyr and mefenpyr-diethyl.
- 3. Composition according to claim 1, which contains an additive comprising an oil of vegetable or animal origin, a mineral oil, the alkylesters thereof or mixtures of these oils and oil derivatives.
- 4. A method of selectively controlling weeds and grasses in crops of cultivated plants, which comprises treating said cultivated plants, the seeds or seedlings or the crop area thereof, with a composition according to claim 1.
- 5. A method of selectively controlling weeds and grasses in crops of cultivated plants, which comprises treating said cultivated plants, the seeds or seedlings or the crop area thereof, with a composition according to claim 2.



- 6. A method of selectively controlling weeds and grasses in crops of cultivated plants, which comprises treating said cultivated plants, the seeds or seedlings or the crop area thereof, with a composition according to claim 3.
- 7.A method according to claim 4 wherein the cultivated plant is cereal or maize.